LISTING OF THE CLAIMS:

Please cancel claims 5-8, without prejudice or disclaimer. Please also amend claims 1-4 and 9, and add new claims 15 and 16 as indicated in the following listing of claims, which replaces all prior versions and listings of claims in the application:

1. (Currently amended) A mutual authentication method for use between a recording apparatus which records copied contents in a memory card as a removable recording medium having an arithmetic processing function, and the memory card, said method comprising:

storing, in a first read-only semiconductor memory in the memory card, first information which depends on the memory card;

storing, in a second semiconductor memory in the memory card, secret information obtained by encrypting the first information using second information which is to be shared by the memory card ~~recording apparatus~~ in executing mutual authentication with the recording apparatus and which depends on the memory card, the second semiconductor memory having a public area accessible by an access procedure and a secret area accessible only by a private access procedure, the secret information being stored in the secret area; [[and]]

generating, by the recording apparatus, authentication information used in mutual authentication with the memory card on the basis of the first information obtained from the memory card [[, and]] ;

executing mutual authentication between the recording apparatus and the memory card using the generated authentication information and

the ~~second~~ secret information, wherein executing the mutual authentication includes

~~generating a random number in the recording apparatus and transferring the random number to the memory card,~~

~~generating a first function in the recording apparatus using the generated authentication information and the generated random number,~~

~~generating a second function, by the arithmetic function of the memory card, using the generated second information and the transferred random number, and transferring the second function to the recording apparatus, and~~

~~comparing the generated first function with the generated second function in the recording apparatus.~~

generating, by the recording apparatus, a first random number and transferring the first random number to the memory card,

generating, by the recording apparatus, a first value from a first arithmetic function using the authentication information and the first random number,

generating, by the memory card, a second value from a second arithmetic function using the secret information and the first random number, and transferring the second value to the recording apparatus,

comparing, by the recording apparatus, the first value with the second value and transferring a first comparison result to the memory card,

generating, by the memory card, a second random number if the first comparison result indicates a match, and transferring the second random number to the recording apparatus,

generating, by the memory card, a third value from a third arithmetic function using the secret information and the second random number,

generating, by the recording apparatus, a fourth value from a fourth arithmetic function using the authentication information and the second random number, and transferring the fourth value to the memory card,

comparing, by the memory card, the third value with the fourth value and outputting a second comparison result,

generating, by the memory card, a first key from a fifth arithmetic function using at least the secret information and the second random number if the second comparison result indicates a match, and

generating, by the recording apparatus, a second key from a sixth arithmetic function using at least the authentication information and the second random number;

storing, by the memory card, the first key in the secret area of the memory card;

encrypting, by the recording apparatus, a content key using the second key and transferring the encrypted content key to the memory card;

encrypting, by the recording apparatus, a content using the content key and transferring the encrypted content to the memory card; and

storing, by the memory card, the encrypted content key and the encrypted content in the public area of the memory card.

2. (Currently amended) The method according to claim 1, further comprising:

generating, by the recording apparatus, the authentication information by encrypting the first information using ~~an encryption key~~ the second information obtained from the memory card.

3. (Currently amended) A mutual authentication method for use between a reproducing apparatus which reproduces copied contents recorded in a memory card as a removable recording medium having an arithmetic processing function, and the memory card, said method comprising:

storing, in a first read-only semiconductor memory in the memory card, first information which depends on the memory card;

storing, in a second semiconductor memory in the memory card, secret information obtained by encrypting the first information using second information which is to be shared by the memory card ~~reproducing apparatus~~ in executing mutual authentication with the reproducing apparatus and which depends on the memory card, the second semiconductor memory having a public area accessible by an access procedure and a secret area accessible only by a private access procedure, the secret information being stored in the secret area; [[and]]

generating, by the reproducing apparatus, authentication information used in mutual authentication with the memory card on the basis of the first information obtained from the memory card [[, and]] ;

executing mutual authentication between the reproducing apparatus and the memory card using the generated authentication information and the ~~second~~ secret information, wherein executing the mutual authentication includes

~~generating a random number in the reproducing apparatus and transferring the random number to the memory card,~~

~~generating a first function in the reproducing apparatus using the generated authentication information and the generated random number,~~

~~generating a second function, by the arithmetic function of the memory card, using the generated second information and the transferred random number, and transferring the second function to the reproducing apparatus, and~~

~~comparing the generated first function with the generated second function in the reproducing apparatus.~~

generating, by the reproducing apparatus, a first random number and transferring the first random number to the memory card,

generating, by the reproducing apparatus, a first value from a first arithmetic function using the authentication information and the first random number,

generating, by the memory card, a second value from a second arithmetic function using the secret information and the first random number, and transferring the second value to the reproducing apparatus,

comparing, by the reproducing apparatus, the first value with the second value and transferring a first comparison result to the memory card,

generating, by the memory card, a second random number if the first comparison result indicates a match, and

transferring the second random number to the reproducing apparatus,

generating, by the memory card, a third value from a third arithmetic function using the secret information and the second random number,

generating, by the reproducing apparatus, a fourth value from a fourth arithmetic function using the authentication information and the second random number, and transferring the fourth value to the memory card,

comparing, by the memory card, the third value with the fourth value and outputting a second comparison result,

generating, by the memory card, a first key from a fifth arithmetic function using at least the secret information and the second random number if the second comparison result indicates a match, and

generating, by the reproducing apparatus, a second key from a sixth arithmetic function using at least the authentication information and the second random number;

encrypting, by the memory card, a secret key stored in the secret area of the memory card using the first key and transferring the encrypted secret key to the reproducing apparatus;

decrypting, by the reproducing apparatus, the encrypted secret key using the second key to obtain the secret key;

transferring, by the memory card, an encrypted content key stored in the public area of the memory card to the reproducing apparatus;

decrypting, by the reproducing apparatus, the encrypted content key using the secret key to obtain a content key;

transferring, by the memory card, an encrypted content stored in the public area of the memory card to the reproducing apparatus; and

decrypting, by the reproducing apparatus, the encrypted content using the content key to obtain a content.

4. (Currently amended) The method according to claim 3, further comprising:

generating, by the reproducing apparatus, the authentication information by encrypting the first information using ~~an encryption key~~ the second information obtained from the memory card.

5-8. (Canceled).

9. (Currently amended) A memory card as a removable recording medium having an arithmetic processing function, comprising:

~~storage means including~~ a first read-only semiconductor memory storing first information which is unique to said memory card [[, and]] ;

a second semiconductor memory storing secret information obtained by encrypting the first information using second information which is to be shared by said memory card ~~a recording apparatus~~ for recording copied contents on said memory card and a reproducing apparatus for reproducing the copied contents in executing mutual authentication among the memory card, the recording apparatus, and the reproducing apparatus, ~~and~~ the second information depending ~~depends~~ on said memory card, the second semiconductor memory having a public area accessible by an access procedure and a secret area accessible by only a private access procedure, the secret information being stored in the secret area; [[and]]

mutual authentication means for executing mutual authentication between the memory card and the recording apparatus, and between the memory card and the reproducing apparatus using authentication information generated based on the first information by the recording apparatus and the reproducing apparatus, and the ~~second~~ secret information, wherein the mutual authentication means includes

~~means for generating random number and transferring the random number to one of the recording apparatus and the reproducing apparatus,~~

~~means for generating a first function by the arithmetic function of the memory card using the second information and the generated random number,~~

~~means for receiving from the one of the recording apparatus and the reproducing apparatus a second function generated using the authentication information and the transferred random number, and~~

~~means for comparing the generated first function with the received second function.~~

means for generating a random number and transferring the random number to the recording apparatus,

means for generating a value from a first arithmetic function using the secret information and the random number,

means for comparing the value with a value transmitted from the recording apparatus and outputting a comparison result, and

means for generating a first key from a second arithmetic function using at least the secret information and the random number if the comparison result indicates a match;

recording process means, including

means for storing the first key in the secret area of the memory card,

means for receiving an encrypted content key from the recording apparatus and storing the encrypted content key in the public area of the memory card, and

means for receiving an encrypted content from the recording apparatus and storing the encrypted content in the public area of the memory card; and

reproducing process means, including

means for encrypting the secret key stored in the secret area of the memory card using a second key generated from the mutual authentication means and transferring the encrypted secret key to the reproducing apparatus,

means for transferring the encrypted content key stored in the public area of the memory card to the reproducing apparatus, and

means for transferring the encrypted content stored in the public area of the memory card to the reproducing apparatus.

10-14. (Canceled).

15. (New) A recording system including a memory card as a removable recording medium having an arithmetic processing function and a recording apparatus for recording copied contents in the memory card while limiting the number of copied contents to be recorded on the memory card, the recording system comprising:

a first read-only semiconductor memory in the memory card for storing first information which depends on the memory card;

a second semiconductor memory in the memory card for storing secret information obtained by encrypting the first information using second information which is to be shared by the memory card ~~recording apparatus~~ in executing mutual authentication with the recording apparatus and which depends on the memory card, the second semiconductor memory having a public area accessible by an access procedure and a secret area accessible by only a private access procedure, the secret information being stored in the secret area;

means, provided in the recording apparatus, for generating authentication information used in mutual authentication with the memory card on the basis of the first information obtained from the memory card;

means, provided in the recording apparatus and the memory card, for executing mutual authentication between the recording apparatus and the memory card using the generated authentication information and the secret information, including

means, provided in the recording apparatus, for generating a first random number and transferring the first random number to the memory card,

means, provided in the recording apparatus, for generating a first value from a first arithmetic function using the

authentication information and the first random number,

means, provided in the memory card, for generating a second value from a second arithmetic function using the secret information and the first random number, and transferring the second value to the recording apparatus,

means, provided in the recording apparatus, for comparing the first value with the second value and transferring a first comparison result to the memory card,

means, provided in the memory card, for generating a second random number if the first comparison result indicates a match, and transferring the second random number to the recording apparatus,

means, provided in the memory card, for generating a third value from a third arithmetic function using the secret information and the second random number,

means, provided in the recording apparatus, for generating a fourth value from a fourth arithmetic function using the authentication information and the second random number, and transferring the fourth value to the memory card,

means, provided in the memory card, for comparing the third value with the fourth value and outputting a second comparison result,

means, provided in the memory card, for generating a first key from a fifth arithmetic function using the secret

information and the second random number if the second comparison result indicates a match, and

means, provided in the recording apparatus, for generating a second key from a sixth arithmetic function using the authentication information and the second random number;

means, provided in the memory card, for storing the first key in the secret area of the memory card;

means, provided in the recording apparatus, for encrypting a content key using the second key and transferring the encrypted content key to the memory card;

means, provided in the recording apparatus, for encrypting a content using the content key and transferring the encrypted content to the memory card; and

means, provided in the memory card, for storing the encrypted content key and the encrypted content in the public area of the memory card.

16. (New) A reproducing system including a memory card as a removable recording medium having an arithmetic processing function and a reproducing apparatus for reproducing copied contents recorded in the memory card, the reproducing system comprising:

a first read-only semiconductor memory in the memory card for storing first information which depends on the memory card;

a second semiconductor memory, provided in the memory card, for storing secret information obtained by encrypting the first information using

second information which is to be shared by the memory card ~~reproducing apparatus~~ in executing mutual authentication with the reproducing apparatus and depends on the memory card, the second semiconductor memory having a public area accessible by an access procedure and a secret area accessible by only a private access procedure, the secret information being stored in the secret area;

means, provided in the reproducing apparatus, for generating authentication information used in mutual authentication with the memory card on the basis of the first information obtained from the memory card;

means, provided in the reproducing apparatus and the memory card, for executing mutual authentication between the reproducing apparatus and the memory card using the generated authentication information and the secret information, including

means, provided in the reproducing apparatus, for generating a first random number and transferring the first random number to the memory card,

means, provided in the reproducing apparatus, for generating a first value from a first arithmetic function using the authentication information and the first random number,

means, provided in the memory card, for generating a second value from a second arithmetic function using the secret information and the first random number, and transferring the second value to the reproducing apparatus,

means, provided in the reproducing apparatus, for comparing the first value with the second value and transferring a first comparison result to the memory card,

means, provided in the memory card, for generating a second random number if the first comparison result indicates a match, and transferring the second random number to the reproducing apparatus,

means, provided in the memory card, for generating a third value from a third arithmetic function using the secret information and the second random number,

means, provided in the reproducing apparatus, for generating a fourth value from a fourth arithmetic function using the authentication information and the second random number, and transferring the fourth value to the memory card,

means, provided in the memory card, for comparing the third value with the fourth value and outputting a second comparison result,

means, provided in the memory card, for generating a first key from a fifth arithmetic function using the secret information and the second random number if the second comparison result indicates a match, and

means, provided in the reproducing apparatus, for generating a second key from a sixth arithmetic function using the authentication information and the second random number;

means, provided in the memory card, for encrypting a secret key stored in the secret area of the memory card using the first key and transferring the encrypted key to the reproducing apparatus;

means, provided in the reproducing apparatus, for decrypting the encrypted secret key using the second key to obtain the secret key;

means, provided in the memory card, for transferring an encrypted content key stored in the public area of the memory card to the reproducing apparatus;

means, provided in the reproducing apparatus, for decrypting the encrypted content key using the secret key to obtain a content key;

means, provided in the memory card, for transferring an encrypted content stored in the public area of the memory card to the reproducing apparatus; and

means, provided in the reproducing apparatus, for decrypting the encrypted content using the content key to obtain a content.